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SurgiCase® Connect

Software User Manual

SurgiCase Connect 2.5
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CE 0120

This medical device has been registered in Malaysia

SurgiCase® Connect

Quick Help

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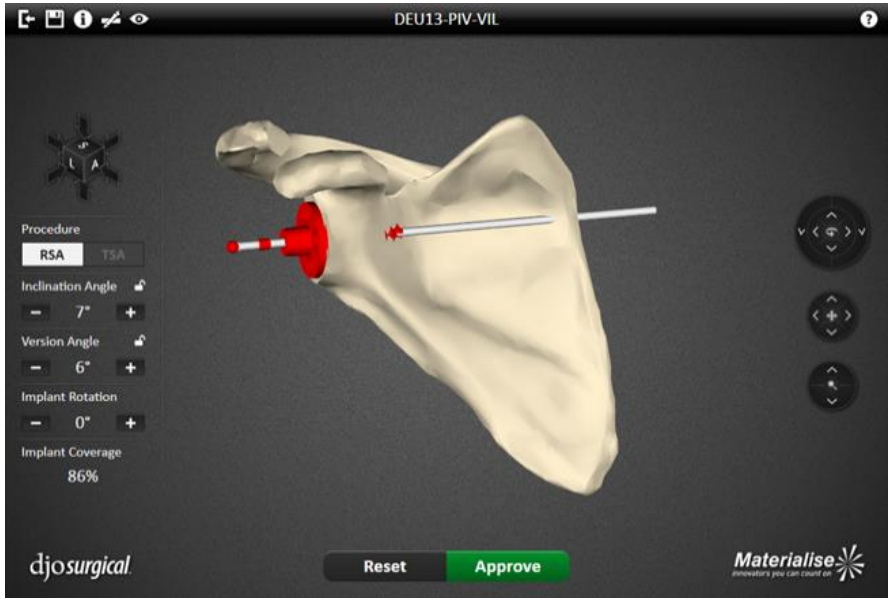
SurgiCase® Connect

1. Introduction

SurgiCase Connect is your window to the Orthopedic services provided by Materialise.

SurgiCase Connect allows you to upload CT/MRI images which Materialise uses to reconstruct a 3D model. We then collaborate with you for the surgical plan and communicate the results through SurgiCase Connect. Finally, Materialise designs and produces surgical guides to transfer the surgical plan to the operation room.



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Surgeon

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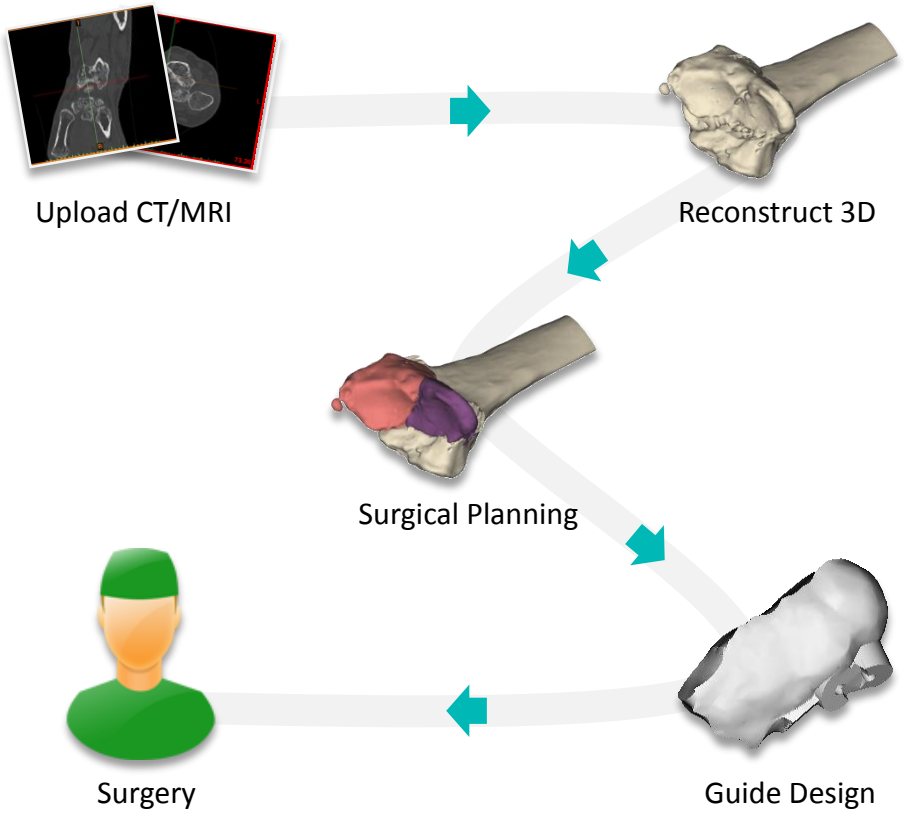


2. Installing SurgiCase Connect

First, go to the SurgiCase Connect website and click the *Download* button. Your browser will offer to download the *setup.exe* installer file: click accept and run the installer. The *Application Install Window* will then appear. Confirm the installation by clicking *Install.*

SurgiCase Connect should now be installed on your computer and will start automatically. If it doesn't, click the SurgiCase Connect icon on your desktop to start the application.

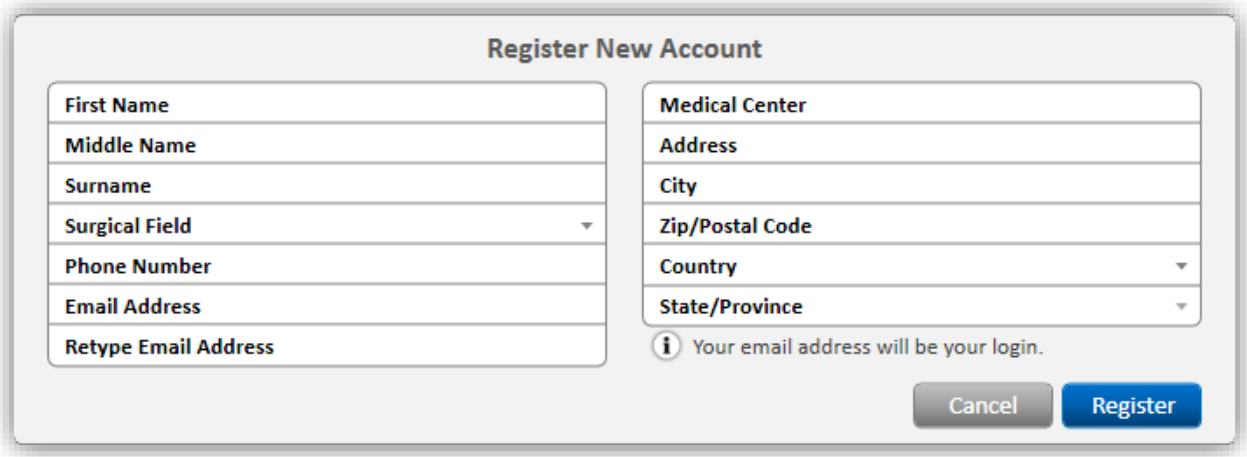
The first time the program starts, the End User License Agreement (EULA) is shown. SurgiCase Connect can only be used after the EULA is accepted.

Always up to date

SurgiCase Connect will always be up-to-date. Upon starting, SurgiCase Connect first checks whether an update is available and if this is the case, the latest version is downloaded and installed automatically.

3. Creating an Account

In order to use SurgiCase Connect, a user account needs to be created. To do this, start SurgiCase Connect and click the hyperlink *New to SurgiCase Connect?*



In the new account panel that pops up, fill in your contact and login information. All fields are mandatory *except* Middle Name.

Your login credentials will be your email address. The email address you provide will be used for correspondence.

Click *Register* to register your account.

An email will be sent to the given email address for a temporary login password.

4. Logging In

Type the email address that you registered and the received temporary password in your SurgiCase Connect account. You are required to change the password once you have successfully signed in.

! SurgiCase Connect is an online tool; internet access is required in order to log in and see your cases.

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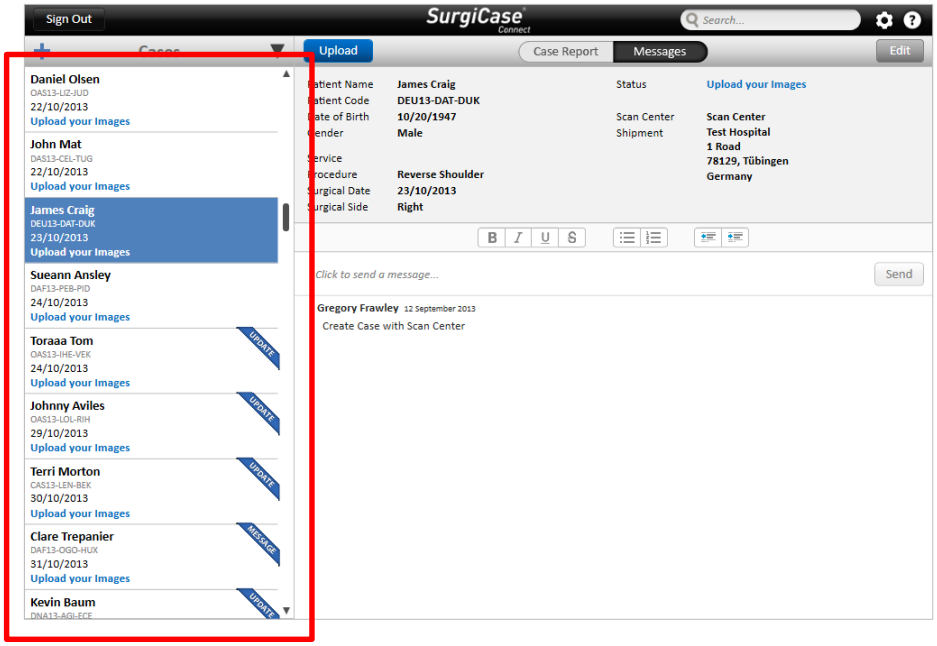
5. Your Cases

Once you have logged in, your cases will be shown in the *Case Overview* screen. By default, upcoming cases that require your attention the most are displayed at the top. There are ribbons on the cases that have updates/messages which require your attention as well.

Your account information and the contact information for your representative are available in the *Settings* screen.



! SurgiCase Connect is an online tool; internet access is required to see your cases.

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Search

Use the search field at the top right to instantly search for a specific case in your list. The list is automatically adjusted according to your search term.

To discard the search results, simply remove the search term.

6. A Case from Start to Finish

SurgiCase Connect takes you through the process in just a few easy steps:

1. Image Upload and 3D Reconstruction
2. Surgical Planning
3. Guide Design and Production
4. Shipment

Creating a Case

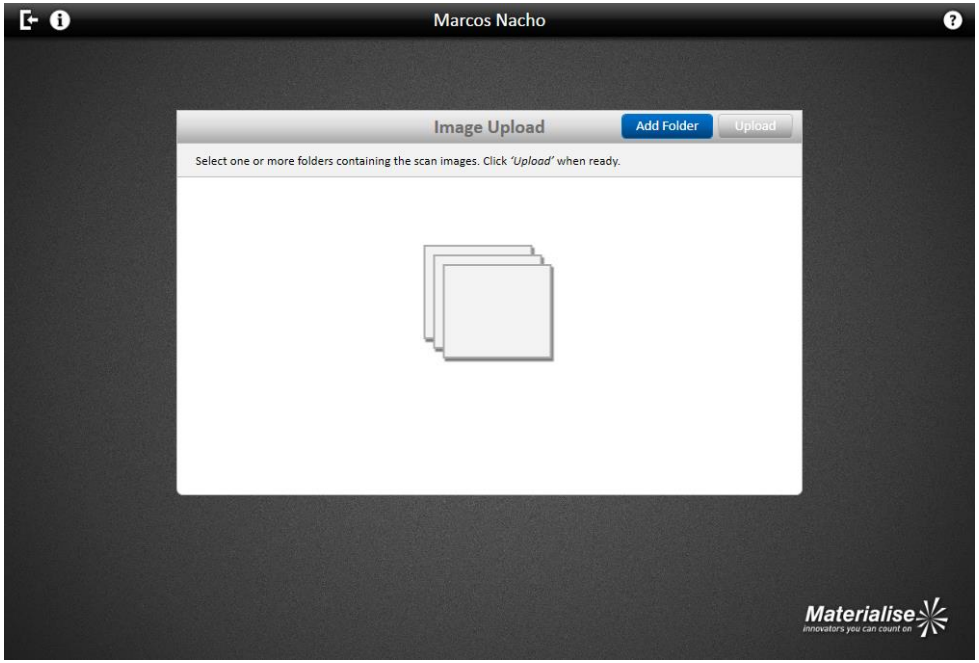
To create a new case, click the *Add Case* button (+ icon) in the *Case Overview* screen.

In the *Create case* panel that pops up fill in all the necessary details. Note that weekends (Saturday and Sunday) cannot be chosen as the *Surgical Date*. All fields are mandatory except *Scan Center*. Leave this field blank in case you will upload the medical images yourself.

Click the *Create* button to finish case creation. If a scan center was selected you will be redirected back to the case overview, if not you will be transferred to the *Case Planner* screen where you can upload the CT/MRI images.

Uploading your CT/MRI Images

Click the *Upload* button in the Case Overview.



In the *Image Upload* panel, click the *Add Folder* button and select the folder containing the CT/MRI images. CT/MRI images are usually delivered on a CD.

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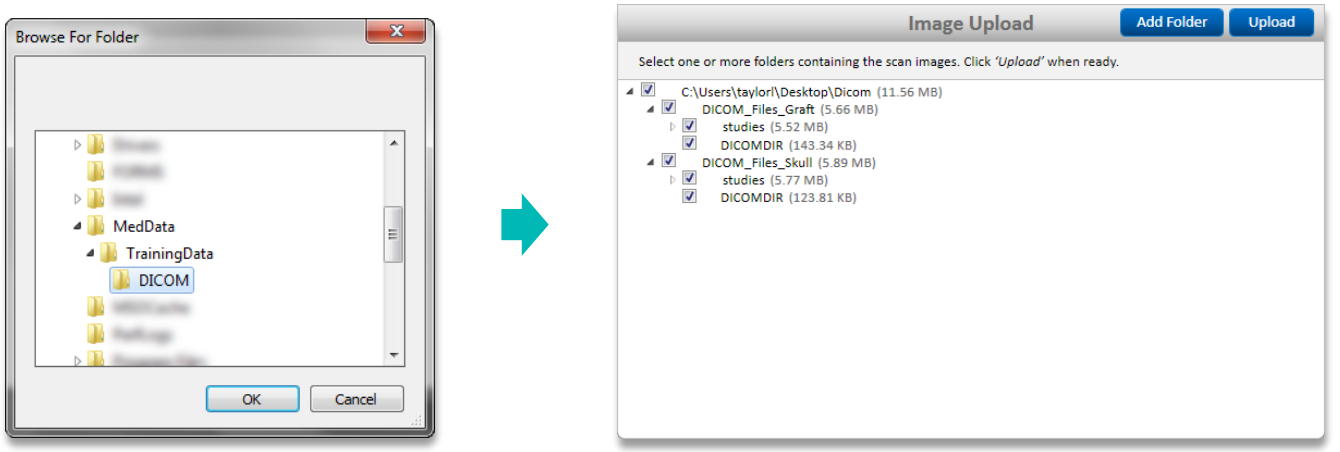
After the CT/MRI images are loaded into SurgiCase Connect, you can exclude certain images or entire folders from the dataset.

Multiple folders can be added by clicking the *Add Folder* button again.



Click *Upload* to start uploading the images to our server. Depending on the size of the image set and your internet connection speed, this may take a while.

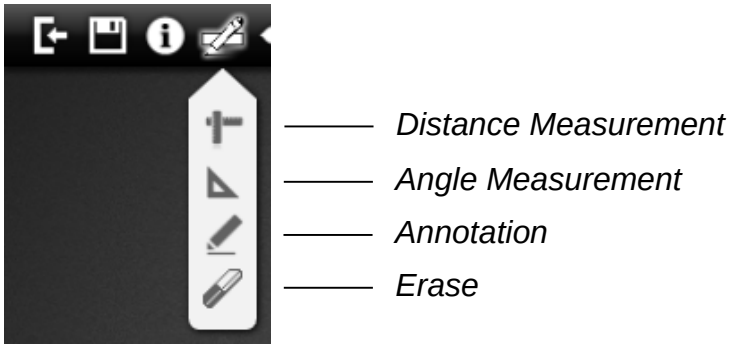
Once the images are uploaded, you can go back to the Case Overview screen and continue working. Meanwhile, Materialise will review the images and start reconstructing the 3D model. You will be notified once the 3D model is ready.

The 3D Reconstruction

The 3D model is a reconstruction (segmentation) based on the uploaded CT/MRI images. See page 16 for more details about controlling the view for the 3D model.

Discussing the Surgical Plan

The surgical planning will happen in our advanced planning products via personal or web-based meetings and the results will be available in SurgiCase Connect for inspection. SurgiCase Connect provides several tools for communicating about the surgical plan visually.



These tools stay active until you indicated them on the 3D model. Alternatively, the *Esc* button can be used to deactivate the current tool. To edit a measurement or annotation, click on them and start editing.

Once Materialise has finished the surgical plan, click the *Approve* button in the flow bar to approve the surgical plan and move on to the design of the surgical guides.

In the case that you disagree with the proposed surgical plan, click the *Reject* button and provide a reason for the rejection in the message box. Your representative will contact you to discuss your issues with the surgical plan.

Guide Design and Production

Using the approved surgical plan, Materialise will start designing the surgical guide(s), which transfer the surgical plan to the operation room.

Once the surgical guides are ready, they can be previewed in SurgiCase Connect.

Shipment

Once the guides are produced, we prepare them for shipment. As soon as the guides are shipped, package tracking information can be found in the messages panel.

7. Viewing the 3D Model

SurgiCase Connect provides intuitive controls for viewing the 3D model from different angles.

To the right of the 3D model, three circular controls provide ways to rotate, move, and zoom the 3D model. The longer you press the arrows, the faster the model will rotate, move, or zoom. The buttons in the middle will bring you back to the default viewing angle, position, or zoom level.

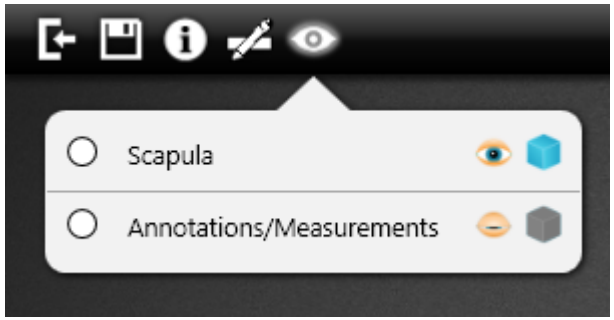
Alternatively, the mouse can be used to rotate, move, or zoom the 3D model. To do this, place the mouse cursor on the 3D model.

- Press the right mouse button and drag the mouse to rotate the 3D model.
- Press the middle mouse button and drag the mouse to move the 3D model.
- Use the scroll wheel to zoom into or out of the 3D model.

To change the camera orientation to one of the 6 presets (***A***nterior, Posterior, ***S***uperior, Inferior, ***L***ateral, Medial), click the arrow pointing to the corresponding side of the cube.

Show / Hide Parts

The 3D model usually consists of several parts such as different bones, implants, guides et cetera. These parts can be shown or hidden individually by clicking the *eye* button. Clicking on the cube can change the transparency properties of these objects.



Your case can consist of several Views (Pre-Op, Plan, …) to facilitate assessment. You can customize a View by switching to the list of objects that are contained in your case.

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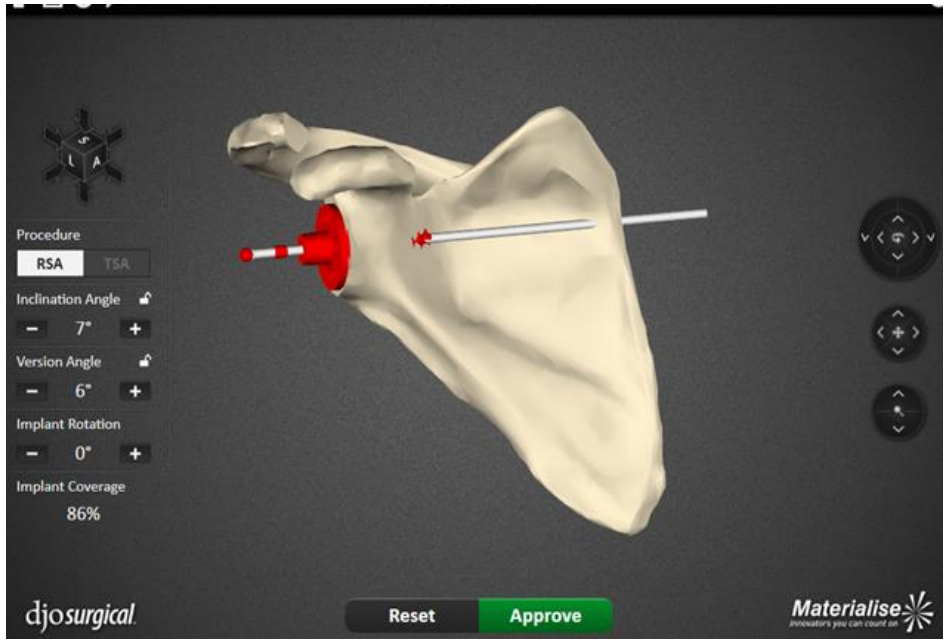
8. Glenoid Implant Planning

SurgiCase Connect also offers a pre-planning interface for glenoid components. Materialise proposes a default plan for your cases which you can review and fine-tune in SurgiCase Connect.



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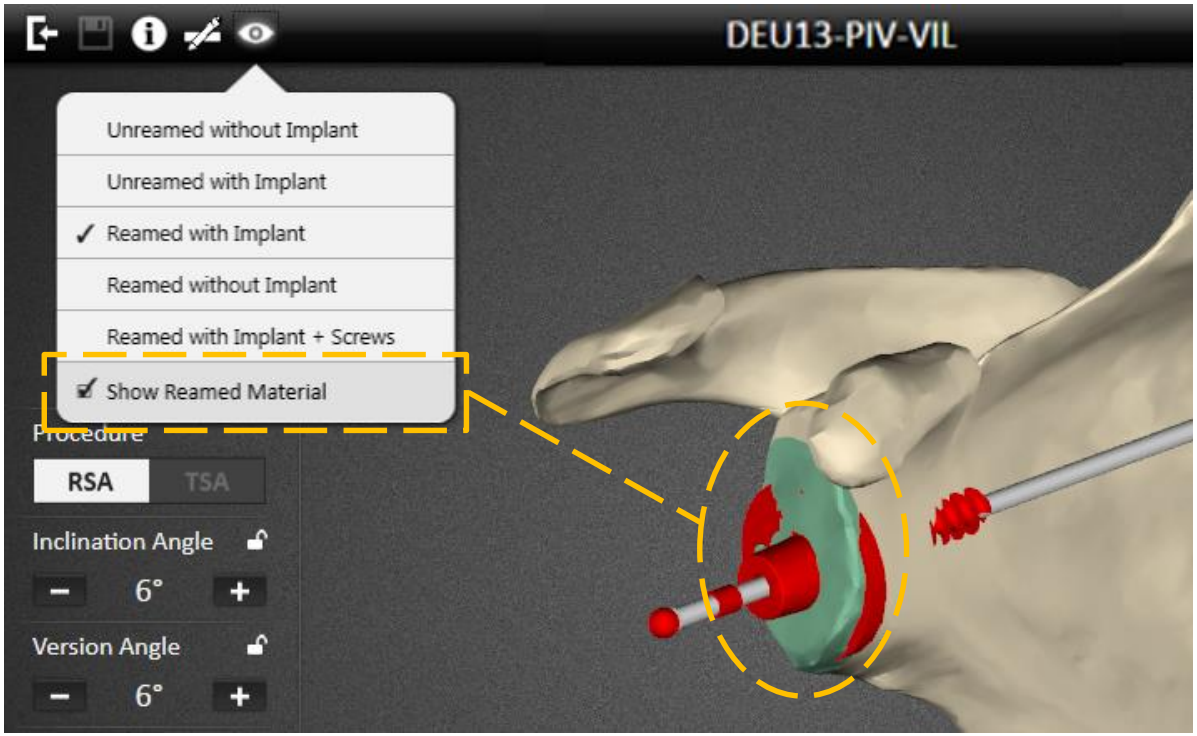
Changing the view

In each glenoid pre-surgical plan, different views are provided that allow fast evaluation of the orientation of the implant: *Unreamed without Implant*, *Unreamed with Implant*, *Reamed with Implant*, *Reamed without Implant* and *Reamed with Implant + Screws* (RSA only). Simply select one of these views in the View panel.

For views that have the reamed scapula, checking the *Show Reamed Material* checkbox in the View menu will also show the reamed material.



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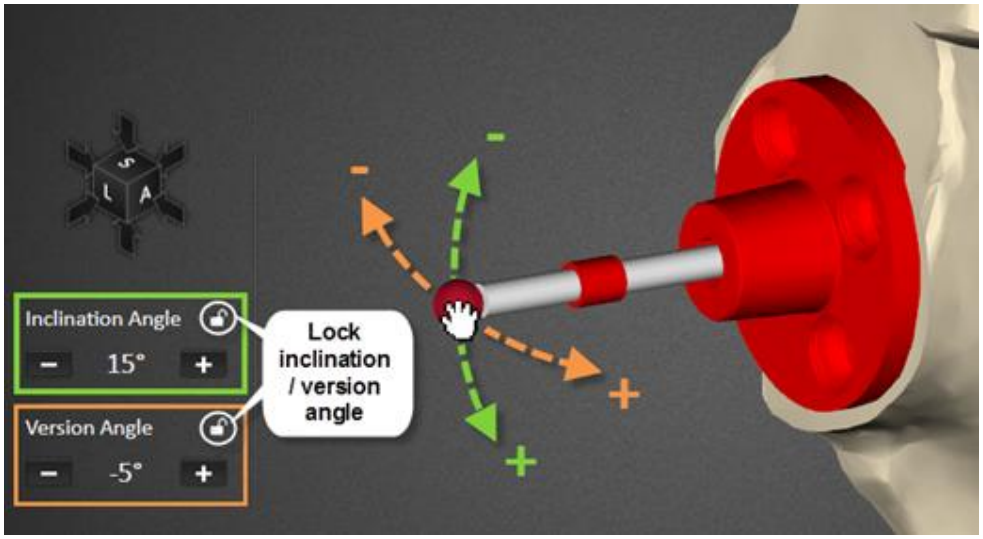
Changing the camera orientation

You can change the orientation of the 3D model to one of the six preset anatomical directions (**S**uperior-inferior; **L**ateral-medial; **A**nterior-posterior). Changing to the Anterior/Posterior view will automatically lock the version angle. Changing to the Superior/Inferior view will automatically lock the inclination angle.

Fine tuning the default plan

You can fine tune the default plan using the controllers on the left side of the screen or the three interactive handles on the implant and pin:

Changing the implant orientation (inclination and version):



The inclination and version angle are displayed in the controllers on the left side of the screen. Use the + and – buttons to change the implant orientation or grab the handle at the end of the implant pin.

Click the *padlock* icon to lock the inclination or version angle once they have been set.

For Anterior and Posterior camera orientation, the version angle is locked automatically so you can easily fine tune the inclination angle without affecting version angle.

For Superior and Inferior camera orientation, the inclination angle is locked automatically so you can easily fine tune the version angle without affecting inclination angle

Both the inclination angle and version angle can be changed within a range of **±30°**.

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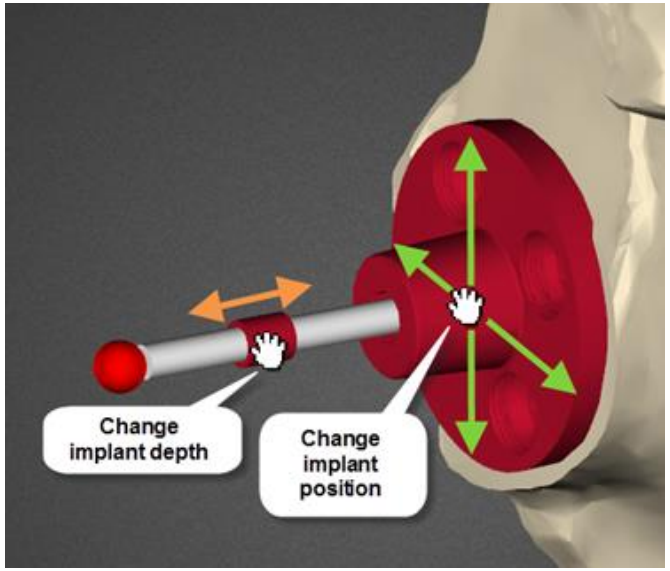
Changing the reaming depth and position on the glenoid:



The glenoid implant can be translated superior/inferior and anterior/posterior in the glenoid face plane by picking on the glenoid plate and moving it.

The superior/inferior and anterior/posterior position of the glenoid implant can be changed within a range of **± 2.5cm** measuring from the default position.

The reaming depth can be changed by clicking on the cylinder on the implant pin and moving it.

The glenoid implant offset can be changed within a range of **± 2.5cm** measuring from the glenoid surface.

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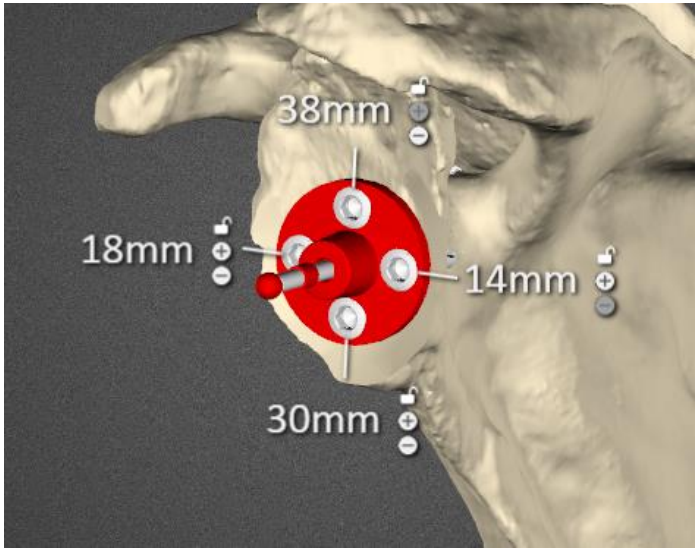
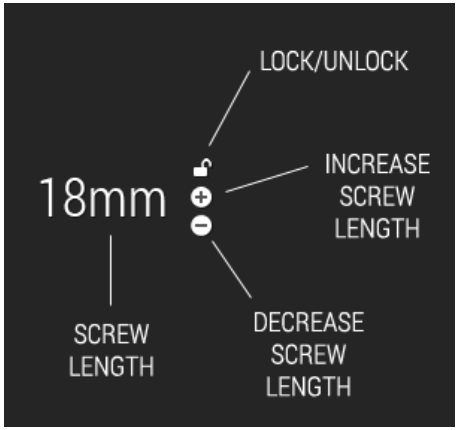
Changing the screw length for RSA Implant



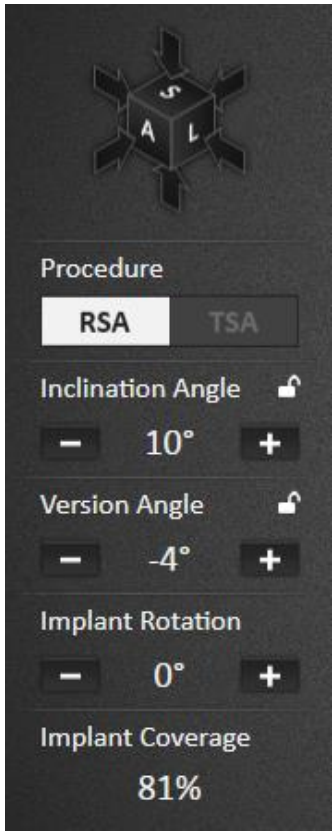


For RSA cases, there is a 5th View available for the evaluation of the screw lengths. By default, the recommended screw length will be applied, and will be automatically recalculated when you reposition the implant.

You can increase/decrease the screw length based on your preference, and lock it using the ***lock*** button so it will stay the same even if the implant position has been adjusted.

Changing the Surgical Procedure

Change the surgical procedure from RSA to TSA or vice versa by clicking the toggle button at the left hand side of the screen. Any planning adjustments will be saved once the surgical procedure is changed, so you are free to switch between 2 procedures for the same case. Do ***note*** that this procedure switch is only available after you are trained for both procedures by DJO.



Implant Size (Only for Total Shoulder)

Change the size of the implant using the + and – button in the implant size controller on the left hand side of the screen.

Implant Rotation

To find a good fit on the glenoid face, use the + and – button in the implant rotation controller on the left hand side of the screen to rotate the implant around the implant pin. The implant rotation is increased or decreased in steps of 5° and is limited to the range [-90°;+90°].

Implant Coverage

This percentage value indicates the total coverage of the implant surface into the bone glenoid surface. It will update in real time as you reposition the implant.

Reset to default

As long as the pre-surgical plan is not approved, any adjustments to the plan can be reset to the default plan using the **Reset** button at the bottom of the screen.

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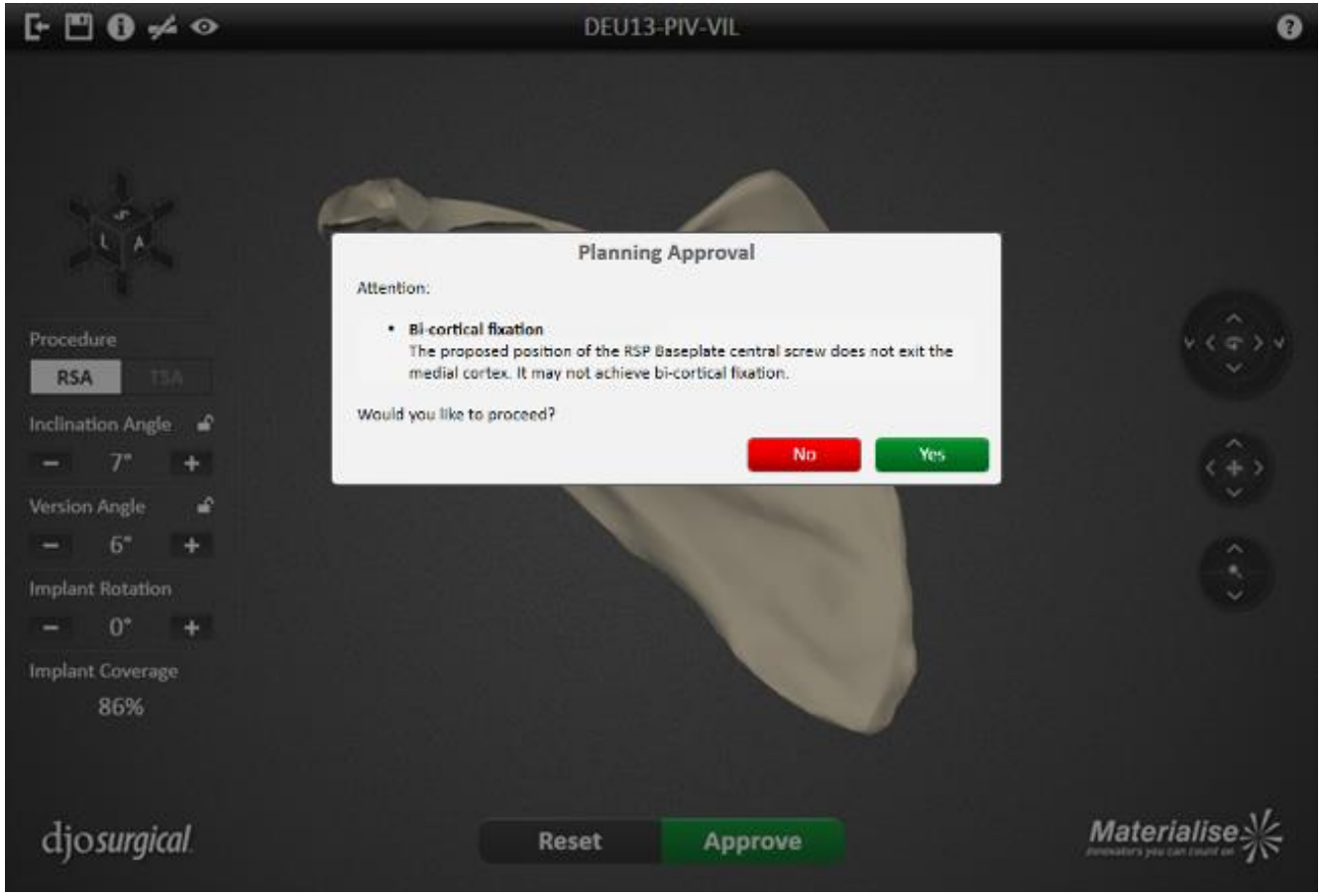
Once the plan is ready, use the **Approve** button at the bottom of the screen to submit the plan to Materialise. The application will do some automatic preliminary checks on the plan, and warn you if there is something that requires your attention.



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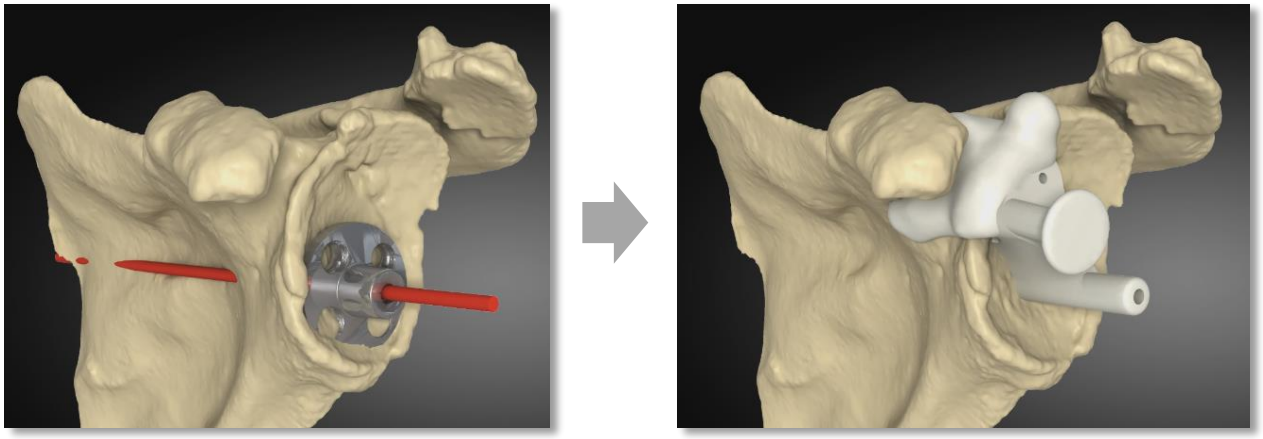
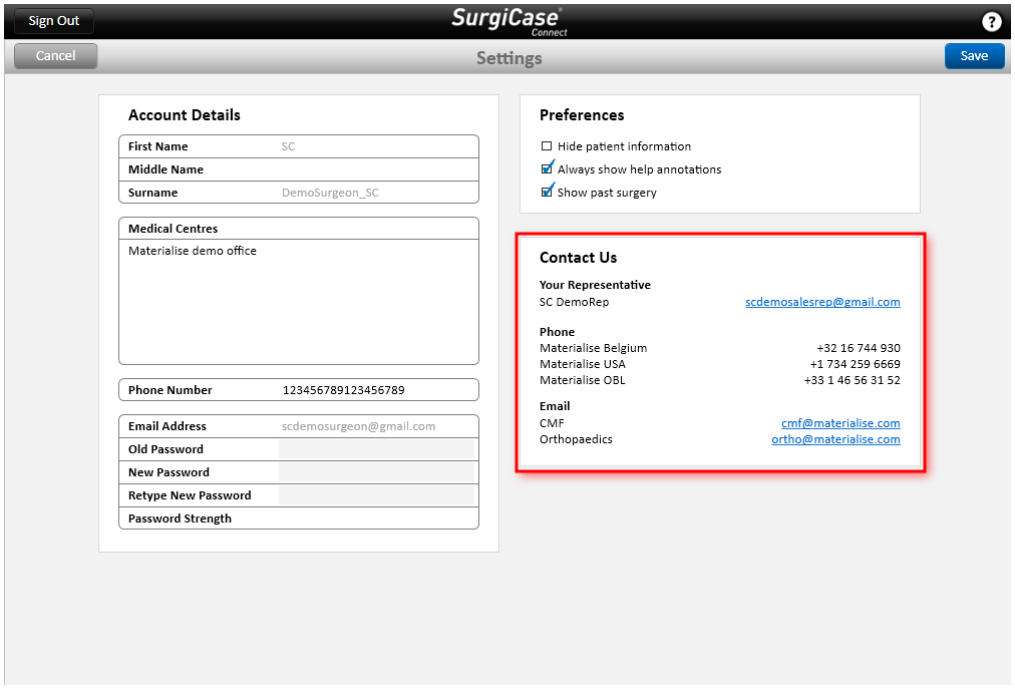
Once the plan is submitted successfully, the design and manufacturing of the surgical guides conforming your plan will start at Materialise. You can now safely close your case in SurgiCase Connect and track the progress in the Case Overview.



9. Communication

A representative will be assigned to you when you create an account. SurgiCase Connect provides several ways to communicate with your representative.

To find the name and contact information of your representative, click the *Settings* button in the *Case Overview* or *Case Details* screen. Here, you can also find general contact information for Materialise.



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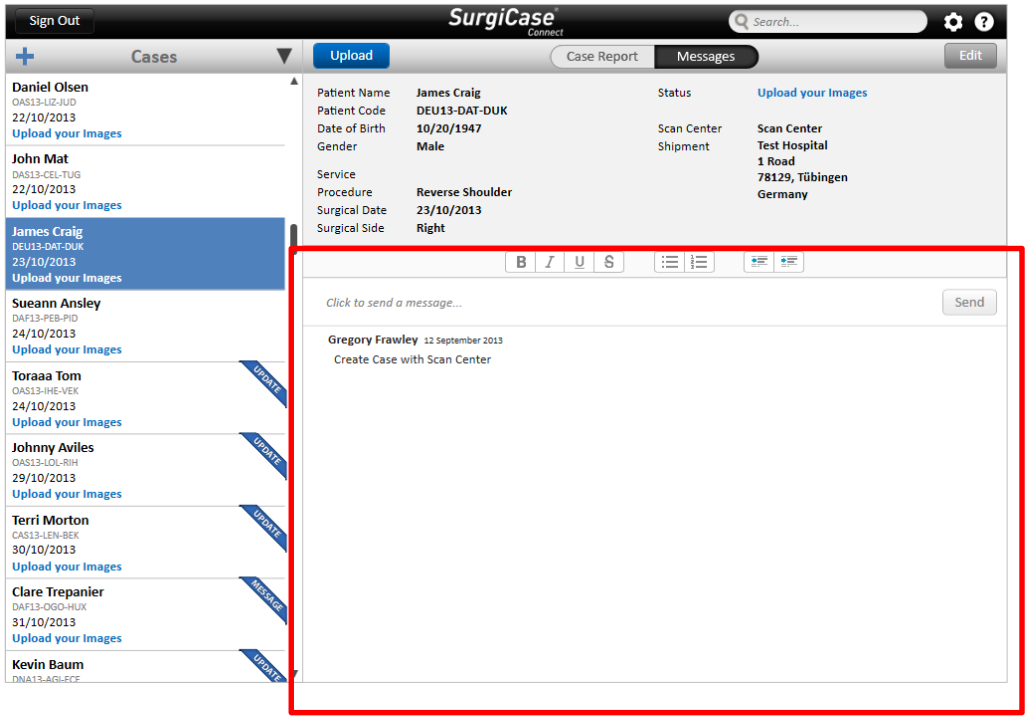
Messages

SurgiCase Connect allows you to exchange messages concerning your case. Click the *Messages* button in the *Case Overview* screen to view the messages sent between you and your representative. You can also access it within the *Case Details* screen via Case Information.

The messages panel allows you to send new messages to your representative. In addition, this messages transcript also logs events such as rejecting a surgical plan and shipment information.



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E-mail

During the workflow, e-mail messages will automatically be sent to inform you about important changes or to inform you about cases requiring attention.

Web Meetings

While SurgiCase Connect offers tools to communicate about the surgical plan, the actual surgical planning is done in our advanced planning software by your representative.

During web meetings, you'll connect to your representative, who will share their screen to collaborate on the surgical plan.

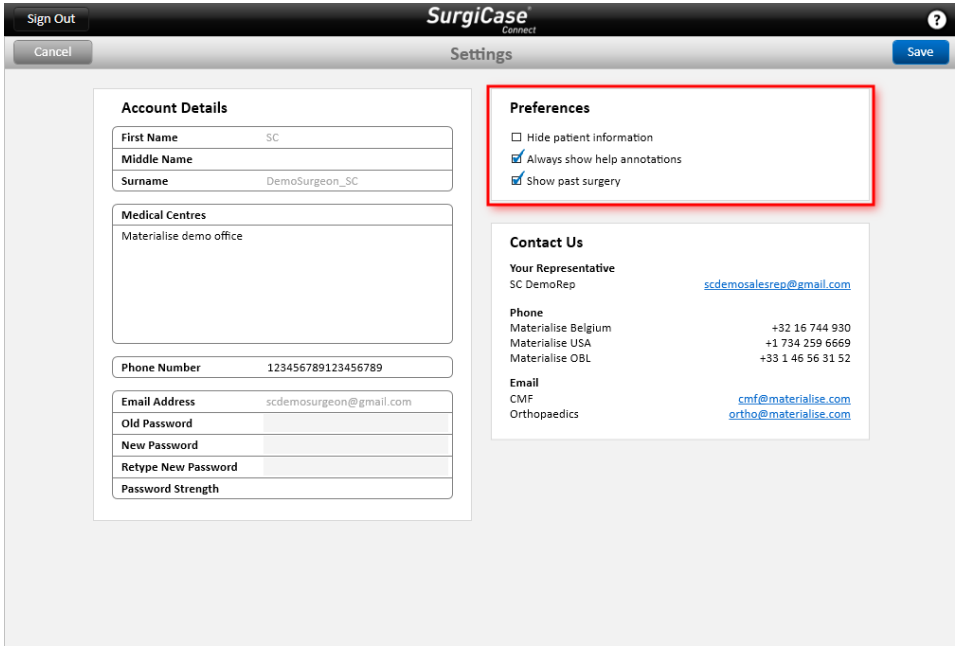
10. Preferences

To change your SurgiCase Connect preferences, click the *Settings* button in the *Case Overview* or *Case Details* screen.

Hide patient information - Hide private patient information

Always show help annotations - Show tips indicating important elements in the workflow of SurgiCase Connect

Show past surgery – Show cases that has been shipped previously in the case list



11. Mouse and Keyboard Control

In most SurgiCase Connect screens, the mouse buttons behave the same as in other software applications (e.g. browsers, e-mail…). However, when viewing the 3D model of a specific case, extra functionality is added to be able to move, rotate, and zoom the 3D model. Likewise, there are some keyboard shortcuts.

Mouse

Button	Action
Left Mouse Button	Behavior is dependent on the selected tool (see page 16)
Right Mouse Button	Rotates the 3D model
Middle Mouse Button	Moves the 3D model
Scroll Wheel	Zooms the 3D model in or out

Keyboard

Key	Action
Esc	Deselects the current tool
Enter	Accepts the text annotation, Creates a new text line

12. System Requirements

To run SurgiCase Connect, you need at least the following system requirements:

- Intel Pentium 4 2.4GHz or equivalent
- 1 GB RAM
- 2 GB of free disk space
- Graphics card & screen supporting at least 1024x768 resolution with true color visual (24 or 32 bit) and 256MB of memory
- Three-button optical mouse with scroll wheel
- 1.5MBit/s internet connection
- Microsoft Windows Vista, Windows 7 or higher
- Microsoft .NET Framework 4.0
- Adobe Reader 7.0 or higher

13. Device lifetime

SurgiCase Connect is software and does not degrade in performance. Its lifetime is determined by commercial requirements, obsolescence of its techniques or obsolescence caused by changes in its host environment (refer to above requirements). Support can in any case not be guaranteed beyond 7 years after the release of this particular version of the software.

14. Troubleshooting

If you run into trouble while using the software, refer to the list of solutions below. If you cannot find an appropriate answer, contact your representative.

I cannot log in.

- Double check your email address and password.
- Verify that you are using the password in the mail sent right after creating your account
- Verify you are connected to the internet.

My email address is/will not be valid anymore.

- Contact your representative. He/she will change your email address.

I don't know the surgery date yet.

- Estimate a possible surgery date anyway. This date can be changed once you know the exact date.

The surgery date needs to be changed.

- In the case list, select the case that requires a change of surgery date, click Edit and adjust the surgery date. Or, open the specific case and click the *Case Information* button. Click *Edit* and adjust the surgery date.

  Even though your representative will automatically be notified, you might want to call them when the surgery is set to a much earlier date to ensure the surgical guides will be delivered in time.

I don't know which CT/MRI images I need to upload.

- CT/MRI images are usually DICOM images (.dcm) made available on a CD. You can select the top folder on the CD to upload.

Uploading CT/MRI images is slow.

- The size of the images can add up to a high volume and this can take a while to upload depending on your internet connection. When the total size exceeds 1 GB, consider sending Materialise a hard copy (CD) by mail.

I cannot open or save a case.

- Verify you are connected to the internet. SurgiCase Connect stores your cases online.

I can't see a 3D model.

- The 3D model may lie out of view. Click the central button of the move buttons (see page 16). This will centralize the model again.

- Check the Show/Hide panel (see page 17). Make sure at least one item has an active eye icon. If no items are listed, there's no 3D model available.

I received an email telling me the status of a case has changed, but I see no difference in SurgiCase Connect.

- Try logging out and in again. The case list should then refresh.

Not all my cases are shown in the case list.

- Verify you haven't entered any text in the search field. Remove the text to view all cases.

I see an issue in the uploaded images, the 3D model, the surgical plan or the designed guide(s).

- Contact your representative as soon as possible. Small issues can be communicated via the messages panel in SurgiCase Connect. For important issues, call your representative to take immediate action.

15. Instructions for Use of SurgiCase Guides and Models

The following information is related to SurgiCase Guides and SurgiCase Models which are considered as an accessory to the software; these components together make one package.

For Indications for use, Contraindications, Precautions, Warnings, possible adverse effects please refer to respective Instructions For Use (IFU) for the SurgiCase Guides and bone models. Note that SurgiCase Guides and Models can be used in different medical applications and for different types of surgeries that would be provided with a respective IFU.

SurgiCase® Connect

16. Contact Information

ortho.materialise.com

Europe (Headquarters)

Manufactured in 2014 by:
Materialise NV
Technologielaan 15
BE-3001 Leuven
Belgium
www.materialise.com

Phone +32 16 744 930

ortho@materialise.be

Published in:
July 2015

USA

Materialise USA, LLC.
44650 Helm Court,
Plymouth MI 48170,
United States

Phone +1 734 259 6669

ortho@materialise.com

Australia

Australian sponsor
Emergo Australia
Level 20 Tower II Darling Park
201 Sussex Street
Sydney NSW 2000
Australia

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